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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|---------------------------------|---------------------------------|-----------------------------|
| 10/599,270 | 09/25/2006 | Martijn Henri Richard Lankhorst | NL04 0358 US1 | 6402 |
| 65913 | 7590 | 08/16/2010 | | |
| NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131 | | | EXAMINER LEE, EUGENE | |
| | | | ART UNIT 2815 | PAPER NUMBER |
| | | | NOTIFICATION DATE 08/16/2010 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/599,270 | Applicant(s) LANKHORST ET AL. | |
| | Examiner EUGENE LEE | Art Unit 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 thru 6, 9, 13 thru 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Czubytyj et al. 5,825,046. Czubytyj discloses (see, for example, FIG. - 1) a memory element comprising a composite memory material (layer of a phase change material) 36. In claim 2, Czubytyj discloses the memory material being made of Te, Ge, Sb and other mixtures. In column 14, lines 23-34, Czubytyj discloses a dynamic range of resistances wherein multiple bits of binary information to be stored in a single memory cell, i.e. n bits of binary information.

Regarding claim 2, see, for example, FIG -4 wherein Czubytyj discloses an addressing matrix 52 including signal generating means.

Regarding claim 3, see, for example, FIG -3 wherein Czubytyj discloses programmable resistance elements 30 parallel to each other.

3. Claims 16, and 18 thru 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ovshinsky et al. 5,912,839. Ovshinsky discloses (see, for example, FIG -2) a memory element (electric device) comprising a memory material (phase change material) 36. In column 18, lines 31-47, Ovshinsky discloses a Te-Ge-Sb ($\text{Sb}_{1-c}\text{M}_c$) alloy wherein Te may comprise 23-58%, Ge

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may comprise 5%-30%, and Sb will comprise the rest. With such a scenario, a may equal 67, and b may equal 23. Te and Ge **collectively** may comprise M_c . For example, Te may be 23% and Ge may be 5% and collectively they equal M_{28} , thereby making Sb equal 72%.

Regarding claim 19, see, for example, column 17, lines 58-60 wherein Ovshinsky discloses that the phase change material includes one or more elements, which may not include Te.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 8, 10 thru 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czubytyj et al. '046. Czubytyj does not disclose a minimum detectable relative resistance difference, a ratio of the further resistance over a minimum resistance of the layer of the phase change material satisfying $k/[(1+k)(N-1)] > (dR/R)_{\min}$, and contact resistance of the further resistor, and composition of the phase change material in c. It would have been obvious to one of ordinary skill in the art at the time of invention was made to use this range for the resistance and phase change material, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

6. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Regarding the applicant's argument that '046 fails to provide fast growth material as defined or characterized in the specification, this argument is not persuasive because although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F. 2d 1181, 26 USPQ 2d 1057 (Fed. Cir. 1993). Therefore, such a description that uses an adjective like "fast" in the limitation "fast growth material" is open to interpretation because the metes and bounds of the term "fast" are not disclosed in the claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENE LEE whose telephone number is (571)272-1733. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eugene Lee
August 11, 2010
/Eugene Lee/
Primary Examiner, Art Unit 2815